

CLAIMS

What is claimed is:

- 5 1. A valve-deactivating hydraulic lifter for selectively coupling the rotary motion of a cam lobe to the reciprocal motion of a valve pushrod in an internal combustion engine, wherein oil is retained in the lifter during periods of engine shutdown, comprising:
 - a) a lifter body having means for following an eccentric surface of said cam lobe and having a first axial bore and having a groove formed in a wall of said first axial bore, said groove being in communication with an oil gallery in said engine;
 - 10 b) a pin housing slidably disposed in said first axial bore and having a transverse bore;
 - c) a pair of opposed locking pins slidably disposed in said transverse bore and each having an outer end for selectively engaging said groove to lock said pin housing to said lifter body; and
 - 15 d) a clocking mechanism for limiting relative rotation between said pin housing and said lifter body.
- 20 2. A valve lifter in accordance with Claim 1, further including a hydraulic lash adjustment mechanism disposed in a second axial bore of said pin housing and including a seat for receiving an end of said pushrod, wherein said hydraulic lash adjustment mechanism includes a chamber for holding oil, and wherein said pin housing includes an oil supply port in communication with said chamber, and wherein said clocking mechanism causes said oil supply port to be facing upwards when said lifter is installed in said internal combustion engine at an angle greater than zero degrees from vertical.

3. A valve lifter in accordance with Claim 1 wherein said clocking mechanism comprises:

- a) a recess formed in one of said pin housing and said lifter body;
- b) a longitudinal groove formed in the other of said pin housing and said lifter body; and
- c) a locking element disposed in said recess and said groove and extending therebetween.

4. A valve lifter in accordance with Claim 3 wherein
10 said locking element is a ball.

5. A valve lifter in accordance with Claim 1 wherein said clocking mechanism comprises:

- a) a flat formed on an outer surface of said pin housing;
- b) a port formed through a wall of said lifter body; and
- c) a locking element disposed in said port and extending into contact with said flat.

6. A valve lifter in accordance with Claim 5 wherein
20 said locking element is selected from the group consisting of a pin and a spring clip.

7. An internal combustion engine comprising a valve-deactivating hydraulic lifter installed in said engine at an angle from vertical for selectively coupling the rotary motion of a cam lobe to the reciprocal motion of a valve pushrod, wherein oil
25 is retained in the lifter during periods of engine shutdown, the lifter including
a lifter body having means for following an eccentric surface of said cam lobe and having a first axial bore and having a groove formed in a wall of said first axial bore, said groove being in communication with an oil gallery in said engine,

a pin housing slidably disposed in said first axial bore and having a transverse bore,

a pair of opposed locking pins slidably disposed in said transverse bore and each having an outer end for selectively engaging said groove to lock said pin housing to said lifter body, and

5 a clocking mechanism for limiting relative rotation between said pin housing and said lifter body.

8. An engine in accordance with Claim 7 wherein said lifter further
10 includes a hydraulic lash adjustment mechanism disposed in a second axial bore of said pin housing and including a seat for receiving an end of said pushrod.

9. An engine in accordance with Claim 8 wherein said lifter is installed at an angle greater than zero degrees from vertical.

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10. An engine in accordance with claim 8 wherein said engine is a slant mount engine.

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11. An engine in accordance with claim 8 wherein said engine is a V-style engine.

12. A valve-deactivating hydraulic lifter for selectively coupling the rotary motion of a cam lobe to the reciprocal motion of a valve pushrod in an internal combustion engine, comprising:

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a) a lifter body having means for following an eccentric surface of said cam lobe and having a first axial bore and having a groove formed in a wall of said first axial bore, said groove being in communication with an oil gallery in said engine;

b) a pin housing slidably disposed in said first axial bore and having at least one transverse bore and having a second axial bore;

c) at least one locking pin slidably disposed in said at least one transverse bore said at least one locking pin having an outer end for selectively engaging said groove to lock said pin housing to said lifter body; and

d) a clocking mechanism for limiting relative rotation between said pin housing

5 and said lifter body.